

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION
(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
 United States Patent and Trademark
 Office
 Box PCT
 Washington, D.C.20231
 ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 15 August 2000 (15.08.00)	To: Assistant Commissioner for Patents United States Patent and Trademark Office Box PCT Washington, D.C.20231 ETATS-UNIS D'AMERIQUE in its capacity as elected Office
International application No. PCT/US99/30066	Applicant's or agent's file reference CHAIN4APCT
International filing date (day/month/year) 17 December 1999 (17.12.99)	Priority date (day/month/year) 17 December 1998 (17.12.98)
Applicant CHAIN, Daniel, G. et al	

1. The designated Office is hereby notified of its election made:

in the demand filed with the International Preliminary Examining Authority on:

13 July 2000 (13.07.00)

in a notice effecting later election filed with the International Bureau on:

2. The election was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Juan Cruz Telephone No.: (41-22) 338.83.38
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PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference CHAIN4APCT	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/US 99/ 30066	International filing date (day/month/year) 17/12/1999	(Earliest) Priority Date (day/month/year) 17/12/1998
Applicant MINDSET BIOPHARMACEUTICALS USA INC et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 6 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

contained in the international application in written form.

filed together with the international application in computer readable form.

furnished subsequently to this Authority in written form.

furnished subsequently to this Authority in computer readable form.

the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. Certain claims were found unsearchable (See Box I).

3. Unity of Invention is lacking (see Box II).

4. With regard to the title,

the text is approved as submitted by the applicant.

the text has been established by this Authority to read as follows:

IMPROVING MENTAL PERFORMANCE PERFORMANCE BY INCREASING BRAIN INSULIN SENSITIVITY

5. With regard to the abstract,

the text is approved as submitted by the applicant.

the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawing to be published with the abstract is Figure No.

as suggested by the applicant.

because the applicant failed to suggest a figure.

because this figure better characterizes the invention.

None of the figures.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Present claims 1-5, 10, 11, 15-17 and 19-22 relate to compounds defined by reference to desirable characteristics or properties, e.g. "...an agent to improve insulin sensitivity in the brain." (claim 1), "...the agent activates the PPAR gamma receptor." (claim 10), an agent which "...activates a RxR receptor that forms a heterodimer with a PPAR gamma receptor." (claim 16), "...the agent interacts with the insulin transduction process" (claim 20), "an agent to improve mental performance" (claim 21) and "cerebral enhancers" (claim 22). The claims cover all compounds having these characteristics or properties, whereas the application provides support within the meaning of Article 6 PCT and disclosure within the meaning of Article 5 PCT for only a very limited number of such compounds. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the compounds by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible.

Additionally, PPAR and RxR receptors are not adequately defined in the application so it is not possible to deduce which compounds are meant to be included in the definition "activators" of RxR, PPAR gamma or PPAR alpha receptors.

Moreover, expressions such as "a thiazolidinedione", "an oxazolidinedione", "a substituted 4-hydroxy-phenylalcanoic acid derivative", "a natural product or is derived from a natural product", "a prodrug" etc. relate to a rather elevated number of possible compounds. Support within the meaning of Article 6 PCT and disclosure within the meaning of Article 5 PCT is to be found, however, for only a very small proportion of the compounds claimed. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible.

Furthermore present claims 1-22 and 23-30 relate to a use defined as "...for improving mental performance in patients having symptoms of reduced mental performance and are (sic) neither in a state of non-insulin dependent diabetes nor a state of general impaired glucose tolerance". The use of these parameters in the present context is considered to lead to a lack of clarity within the meaning of Article 6 PCT. It is impossible to compare the parameters the applicant has chosen to employ with what is set out in the prior art. The lack of clarity is such as to render a meaningful complete search impossible. Consequently, the search has been restricted to the use of the claimed compounds.

Consequently, the search has been carried out for those parts of the claims which appear to be clear, supported and disclosed, namely those parts relating to the compounds specifically mentioned in the claims and their use related to improving mental performance with due regard to the general idea underlying the application.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/30066

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61K31/425 A61K31/44 A61K31/42

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
T	COMBS, C.K. ET AL: "Inflammatory mechanisms in Alzheimer's disease: Inhibition of beta.amyloid -stimulated proinflammatory responses and neurotoxicity by PPAR.gamma agonists" THE JOURNAL OF NEUROSCIENCE, vol. 20, no. 2, 15 January 2000 (2000-01-15), pages 558-567, XP000933946 the whole document ---	1-30
E	WO 00 32190 A (CASE WESTERN RESERVE UNIVERSITY) 8 June 2000 (2000-06-08) the whole document ---	1-13, 15, 18, 20, 23 -/-

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

15 August 2000

Date of mailing of the international search report

23/08/2000

Name and mailing address of the ISA

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Authorized officer

Mair, J

INTERNATIONAL SEARCH REPORT

International Application No

US 99/30066

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	WO 00 23451 A (NOVO NORDISK A/S) 27 April 2000 (2000-04-27) the whole document especially page 1, line 23 ---	1-5, 10, 11, 13, 15, 19, 20, 23
E	WO 00 23445 A (NOVO NORDISK A/S) 27 April 2000 (2000-04-27) the whole document especially page 1, line 23 ---	1-5, 10, 11, 13, 15, 19, 20, 23
E	WO 00 23417 A (NOVO NORDISK A/S) 27 April 2000 (2000-04-27) the whole document especially page 1, line 23 ---	1-5, 10, 11, 13, 15, 19, 20, 23
E	WO 00 23416 A (NOVO NORDISK A/S) 27 April 2000 (2000-04-27) the whole document especially page 1, line 23 ---	1-5, 10, 11, 13, 15, 19, 20, 23
E	WO 00 23415 A (NOVO NORDISK A/S) 27 April 2000 (2000-04-27) the whole document especially page 1, line 24 ---	1-5, 10, 11, 13, 15, 19, 20, 23
E	WO 00 23407 A (GLAXO GROUP LIMITED) 27 April 2000 (2000-04-27) the whole document ---	1-5, 10, 11, 13, 15-17, 19, 20, 23
E	US 6 028 088 A (PERSHADSINGH ET AL) 22 February 2000 (2000-02-22) the whole document especially column 33, Table V and VI; claims 30 and 31 ---	1-6, 10, 11, 15-17, 19-23

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/30066

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X	KITAMURA, Y. ET AL: "Increased expression of cyclooxygenases and peroxisome proliferator-activated receptor gamma in Alzheimer's disease brains" BIOCHEMICAL AND BIOPHYSICAL RESERACH COMMUNICATIONS, vol. 254, no. 3, 27 January 1999 (1999-01-27), pages 582-586, XP000929650 cited in the application the whole document ---	1-5, 10, 11, 13, 15, 16, 19, 23
P, X	WO 99 16758 A (DR. REDDY'S RESEARCH FOUNDATION) 8 April 1999 (1999-04-08) the whole document especially page 96, claim 22, line 25 ---	1-5, 10, 11, 13, 15, 19, 20
P, X	WO 99 38850 A (DR. REDDY'S RESEARCH FOUNDATION) 5 August 1999 (1999-08-05) the whole document especially page 106, claim 21, line 9-10 ---	1-5, 10, 11, 13, 15, 19, 20
P, X	WO 99 20614 A (DR. REDDY'S RESEARCH FOUNDATION) 29 April 1999 (1999-04-29) the whole document especially page 113, claim 23, line 9-10 ---	1-5, 10, 11, 13, 15, 19, 20
X	US 5 556 843 A (ROMEO ET AL) 17 September 1996 (1996-09-17) cited in the application the whole document especially column 2, line 4-7; column 4, claims 6 and 7 ---	1-5, 23
A	WO 97 31907 A (GLAXO GROUP LTD.) September 1997 (1997-09) cited in the application the whole document ---	11, 12
A	US 5 039 794 A (WIER ET AL) 13 August 1991 (1991-08-13) cited in the application the whole document ---	28
A	US 4 540 564 A (BODOR) 10 September 1985 (1985-09-10) cited in the application the whole document ---	26, 27
		-/-

INTERNATIONAL SEARCH REPORT

International Application No

US 99/30066

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>DUELLI, R. ET AL: "Intracerebroventricular injection of streptozotocin induces discrete local changes in cerebral glucose utilization in rats" INTERNATIONAL JOURNAL OF DEVELOPMENTAL NEUROSCIENCE, vol. 12, no. 8, 1994, pages 737-747, XP000933903 cited in the application the whole document ---</p>	1-30
A	<p>MUKHERJEE, R. ET AL: "Sensitization of diabetic and obese mice to insulin by retinoid X receptor agonists" NATURE, vol. 386, 1997, pages 407-410, XP002081440 cited in the application the whole document ---</p>	5, 15-17
A	<p>BLUM-DEGEN D. ET AL: "Altered regulation of brain glucose metabolism as a cause of neurodegenerative disorders?" JOURNAL OF NEURAL TRANSMISSION, vol. suppl. 46, 1995, pages 139-147, XP000933904 cited in the application the whole document ---</p>	1-30
A	<p>GRANNEMAN, J. ET AL: "Member of the Peroxisome Proliferator-Activated Receptor family of transcription factors is differentially expressed by oligodendrocytes" JOURNAL OF NEUROSCIENCE RESEARCH, vol. 51, 1998, pages 563-573, XP000933914 cited in the application the whole document especially page 564, lefthand column, line 18-24 ---</p>	1-30
A	<p>HOYER, S. ET AL: "Brain glucose metabolism is controlled by amplification and desensitization of the neuronal insulin receptor" ANNALS OF THE NEW YORK ACADEMY OF SCIENCES, vol. 777, 1996, pages 374-379, XP000933907 cited in the application the whole document -----</p>	1-30

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

US 99/30066

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
WO 0032190	A	08-06-2000	NONE		
WO 0023451	A	27-04-2000	AU	6325799 A	08-05-2000
WO 0023445	A	27-04-2000	AU	6325599 A	08-05-2000
WO 0023417	A	27-04-2000	AU	6325899 A	08-05-2000
WO 0023416	A	27-04-2000	AU	6325699 A	08-05-2000
WO 0023415	A	27-04-2000	AU	6190199 A	08-05-2000
WO 0023407	A	27-04-2000	AU	6350699 A	08-05-2000
US 6028088	A	22-02-2000	NONE		
WO 9916758	A	08-04-1999	ZA	9809790 A	28-04-1999
WO 9938850	A	05-08-1999	AU	1887999 A	16-08-1999
WO 9920614	A	29-04-1999	AU	1120699 A	10-05-1999
			NO	20002114 A	26-06-2000
US 5556843	A	17-09-1996	IT	1260155 B	28-03-1996
			AU	4706293 A	03-03-1994
			DE	69307895 D	13-03-1997
			DE	69307895 T	14-08-1997
			EP	0652755 A	17-05-1995
			JP	7509478 T	19-10-1995
			AT	148345 T	15-02-1997
			CA	2141557 A	17-02-1994
			WO	9403178 A	17-02-1994
			ES	2101334 T	01-07-1997
WO 9731907	A	04-09-1997	AP	780 A	22-11-1999
			AU	717699 B	30-03-2000
			AU	2093597 A	16-09-1997
			BG	102792 A	31-08-1999
			BR	9707786 A	27-07-1999
			CA	2247443 A	04-09-1997
			CN	1218460 A	02-06-1999
			CZ	9802750 A	13-01-1999
			EP	0888317 A	07-01-1999
			HR	970110 A	30-04-1998
			JP	2000507216 T	13-06-2000
			NO	983940 A	27-10-1998
			PL	328871 A	01-03-1999
			SK	116398 A	13-04-1999
US 5039794	A	13-08-1991	DK	491087 A	20-03-1988
			EP	0260708 A	23-03-1988
			KR	9102703 B	03-05-1991
			JP	63179896 A	23-07-1988
US 4540564	A	10-09-1985	US	4479932 A	30-10-1984
			US	480921 A	14-11-1989
			US	5087618 A	11-02-1992
			US	5008257 A	16-04-1991

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

US 99/30066

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4540564 A		US 5187158 A	16-02-1993
		US 5389623 A	14-02-1995
		US 5525727 A	11-06-1996
		AT 126695 T	15-09-1995
		AU 567433 B	19-11-1987
		AU 1703483 A	02-12-1983
		CA 1253856 A	09-05-1989
		CA 1327566 A	08-03-1994
		DE 3382795 D	28-09-1995
		DE 3382795 T	15-02-1996
		EP 0110955 A	20-06-1984
		EP 0218300 A	15-04-1987
		EP 0221588 A	13-05-1987
		EP 0224283 A	03-06-1987
		EP 0222425 A	20-05-1987
		EP 0262696 A	06-04-1988
		EP 0256577 A	24-02-1988
		ES 522489 D	16-12-1984
		ES 8502087 A	16-03-1985
		IE 69557 B	02-10-1996
		IT 1171851 B	10-06-1987
		JP 2587034 B	05-03-1997
		JP 58206561 A	01-12-1983
		US 4900837 A	13-02-1990
		WO 8303968 A	24-11-1983
		US 4880816 A	14-11-1989
		US 4622218 A	11-11-1986
		US 4824850 A	25-04-1989
		US 4829070 A	09-05-1989
		ZA 8303521 A	24-12-1984
		US 4727079 A	23-02-1988